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.. ASBESTOS ..

A MONTHLY MARKET JOURNAL DEVOTED TO THE
INTERESTS OF THE ASBESTOS AND MAGNESIA INDUSTRIES

A. S. ROSSITER, EDITOR

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Block-Caving at the King Mine

(Of Asbestos Corporation Limited)

The block caving method of mining as developed by the King Mine, Asbestos Corporation Limited, Thetford Mines, Quebec, is proving of interest to mining engineers and to all those engaged in the various branches of the asbestos industry.

Since the publication of a technical paper at the annual meeting of the Canadian Institute of Mining & Metallurgy in April 1934, visitors to the mine have been frequent.

A short non-technical description of the method by which asbestos rock is now won for milling may be interesting to the trade.

The King Pit has reached a depth beyond which it was not economical to continue working as an open pit. It was necessary to adopt a method of mining which would have a low cost and one by means of which clean fibre, uncontaminated by overburden and surface drainage, or debris from pit equipment would be recovered. It was also desirable to mine as nearly as possible 100 per cent of the fibre bearing body.

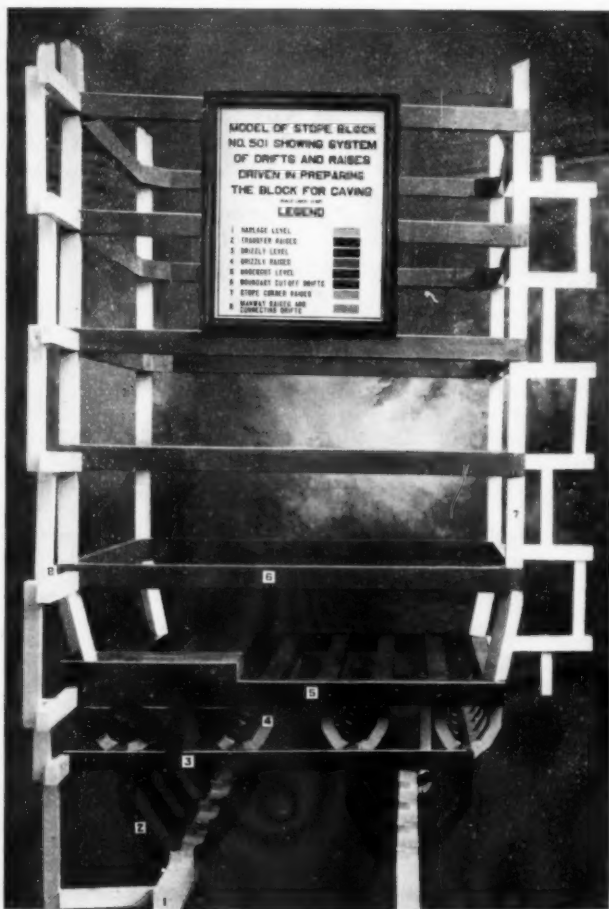
During the transition from open-pit to underground working a minimum of 2,000 tons per day of ore was required to keep the mill in operation. This was secured by driving adits into a side of the pit and opening a series of stopes above the 300 foot level and underneath surface tracks and cableway head towers.

The ore body was carefully delimited by diamond drilling.

A vertical shaft was raised from the 500 foot level to the 300 foot level collaring in the pit bottom, and haulage tracks run up a 45 deg. incline on the pit face from the shaft collar to steel hoppers above a sluice leading to the primary rock crushers.

The ground to be mined was laid out in squares 160 feet to a side, the height of a block being 500 feet. A main

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haulage level was run from the shaft to No. 501 block, and two haulage levels driven beneath the block at the 500 foot level at intervals of 80 feet as shown on accompanying photograph of model. Along the haulage ways loading chutes were erected. These are of steel construction with chain and ball gates actuated by compressed air hoists. At 45 feet above the haulage level are four grizzly drifts. From the loading chutes on the haulage levels transfer raises connect with the grizzly level. Over each raise are placed grizzlies constructed of steel beams. Branched upwards from each grizzly are a pair of raises belled out to form cones, the top of which are twenty feet above the grizzly level, the margins of the cones touching each other. At 40 foot intervals in height fringe drifts were run around the outside of the block to control the rate and margin of breaking. These are connected by manway raises fitted with ladders at the corners of the block. Access may be had to the fringe drifts and the rate of breaking of the ore observed.

In operation, after the completion of the grizzly raises an undercut to a height of 15 feet above the top of the raises is made across the block, the swell being drawn off as blasted.

The grizzly drifts are lined with steel beams and concrete, fitted with pipes for compressed air for drilling, and also wired for electric lighting and an electric blasting system.

The rock blasted in the undercut is allowed to run thru the grizzlies into the pockets above the loading chutes; pieces of rock too large to pass thru the grizzly being drilled and blasted.

The train crew draw ore from the chutes, loading 5 cars to a train, each car carrying 6 tons of ore. The cars are dumped automatically into a loading pocket at the shaft between the 500 and 600 foot levels.

As ore is allowed to run on to the grizzlies the roof rock settles and breaks down, the section between the floor of the undercut and the unbroken block being always full of broken rock. As the surface sinks, tailings from the mill are dumped from a belt into the cavity, thus supporting

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the walls of the adjoining blocks.

No wood is used underground; all timbering is steel, even wedges are made of brake lining; shovel and pick handles are of steel tubing. Workmen are not allowed to carry matches. Thus, asbestos fibre from underground rock can contain no wood splinters. Main haulage ways are lighted by electricity and all workmen carry portable electric lamps. Ore is hoisted from the shaft in two balanced skips at the rate of 135 tons per hour, the time required for a round trip of a skip being less than four minutes.

Some of the advantages of block caving as practiced by Asbestos Corporation Limited over other methods of mining are cleanliness; freedom from foreign matter; natural color of the fibre; lack of interference by bad weather; more finely broken ore from the mine which requires less crushing in the mill and consequently less bruising of the fibre; a larger percentage of free fibre in the mill feed as this fibre is finished without the usual amount of milling which injures and pounds dust into it; lower drying costs, as ice and snow, common in open-pit rock in the winter, need not be melted.

A more uniform mill load may be maintained and more uniform grades of fibre produced as ore can be drawn from blocks in different parts of the ore body at the same time. The accident record is much below that of the former open pit method of working. The cost per ton of finished fibre is lower than formerly. From the first block 600,000 tons of ore has been drawn and milled and the second block is in operation.

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J. S. Hancock

We have just learned with very great regret of the death of J. S. Hancock, Managing Director of Asbestocement Manufacturing Company Limited, of Johannesburg, South Africa, on June 25th, 1934.

Mr. Hancock was the pioneer of modern methods of asbestos cement manufacture in South Africa. Besides being Managing Director of Asbestocement Manufacturing Company which he founded in 1919, he held the same position in Asbestos Products Limited, founded by him in 1925. Like all pioneer concerns they have had to battle but today are well known, established businesses.

Originally these two firms were primarily interested in the manufacture of flat and corrugated asbestos cement sheets; today those lines are of comparatively secondary importance—special insulation work and a hundred and one other lines in asbestos and asbestos cement taking their place.

Besides being interested in the manufacture of asbestos cement products he controlled several asbestos mines and was the sole proprietor of a large merchant business in Johannesburg under the name of Hancock's Asbestos Company with head office at 104 Pritchard Street. His interest in local industry was known thruout the Union of South Africa; he was twice Chairman of the Federation of Industries for the Union, and on two occasions the Government Nominee for the Industrial Section for the League of Nations at Geneva.

The South African Asbestos Community has lost a friend.



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Asbestos Fire Ropes

BY LEWIS STERLING

Asbestos was first used by the early Greeks as a shroud for cremation purposes, in fact a search for some method of keeping separate the ashes of the deceased and those of the funeral pyre, was the real reason for its discovery.

Instead of being used in ceremonies of death, as in those times, asbestos is now used for the saving of lives. The thought "Asbestos curtains for theatres" is probably the first one to enter your mind, but this article refers to a more immediate use of asbestos in saving human beings from fire hazards—that of fire-ropes.

As far as can be learned asbestos ropes for use by firemen have not made an appearance in this country. In Germany, however, many experiments have been made along this line, some of the first having taken place as early as 1905, and at the present time, asbestos ropes are used in almost every city in Germany as fire fighting equipment. These rescue ropes are made of asbestos fibre woven around steel wires tested for great tensile strength, and one of their first advantages over ordinary fireproofed rope is the fact that they do not become slippery during wet weather and are not injured by water.

Intensive tests were made with asbestos ropes manufactured by the Wertheims Co. at their factories in Frankfurt, Germany. These tests were conducted and approved by the German government, and some interesting facts concerning this use of asbestos were uncovered. Scientists found that a 3-4 inch woven rope with steel wire core carried a weight of 2,000 pounds before it gave way, and then only one of the seventy strands from which it was woven broke, proving that much greater weight could be carried with comparative safety. Tensile tests were also made, and it was found that a 3-4 inch rope weighted with 100 kilograms stretched only 3/10%. A rope weighted with 400 pounds stretched less than 1%. This was proof that ropes made entirely of asbestos would be strong enough for ordinary use as fire equipment.

Below are given some results of weight tests, together

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September 1934

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with proportionate weights of ropes. These tests were made with ropes woven entirely of asbestos fibre:

A 1/2 inch rope carries 200 pounds.

A 3/4 inch rope carries 300 pounds.

A 1 inch rope carries 500 pounds.

The weights of these ropes per hundred feet:

1/2 inch rope weighs 10 pounds.

3/4 inch rope weighs 20 pounds.

1 inch rope weighs 40 pounds.

1-1/4 inch rope weighs 70 pounds.

Information Circular 6790 issued recently by the U. S. Bureau of Mines giving general information on asbestos under the title "Asbestos—Domestic and Foreign Deposits" (See July "ASBESTOS," page 18) will be succeeded by other circulars of similar nature.

One is now in process of preparation and will be issued under the title "Asbestos—General Information." It will cover varieties, origin, mode of occurrence, physical properties, chemical composition, uses, mining methods, world production, world consumption, imports and exports.

High-Grade Asbestos Textiles

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The Asbestos Umbrella

The use of asbestos umbrellas, if we are to believe current news dispatches, is becoming more general among firemen in European countries. Germany apparently tried them out first; now their use has spread to England.

Full asbestos suits of the overall type, with helmet and gas mask and gloves of asbestos cloth and an asbestos umbrella, the last named being simply an umbrella frame covered with asbestos cloth, are said to have been tried out successfully in London. In Germany we understand the helmet is of steel with a cape of asbestos cloth to protect the back of the neck from danger of falling flakes of fire.

It is said that with an outfit of this nature firemen are protected from falling embers and are able to approach more closely to a burning structure.

So far we have not heard of the asbestos umbrella being used in the United States.

Asbestos Awnings and Fire Insurance Demands

Every manufacturer of Asbestos textiles will be interested in the article recently published by the National Canvas Goods Manufacturers Review — "Hundreds of Thousands of Dollars Lost to Canvas Industry Thru Fire Hazards"—which calls attention to the attitude of most awning manufacturers toward asbestos cloth awnings.

The article stresses the fact that asbestos awnings are not sufficiently advertised among awning users; that awning manufacturers hesitate to use asbestos cloth because "it costs too much;" that stores making a specialty of men's clothing should be particularly interested in asbestos awnings, and that fire insurance companies should know that such a material can be purchased as a great many fires arise from this cause.

"Hundreds of fires from this source alone are never reported" reads the article, "otherwise there would be a mandatory demand from Fire Insurance Companies that

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'fire-resistant treated awnings must be used on buildings where fire risk is a potential possibility.' The day is coming when such an order will become a clause in business fire insurance policies and as an industry (canvas goods industry) we may as well anticipate this and give the public protection voluntarily rather than wait to have it forced on us."

Asbestos and Medical Service

Several times recently we have seen in the current news reports of some sort of medical treatment which uses asbestos cloth in one form or another.

One of these describes a condition where a patient was affected by the dyes in certain fabrics and in testing for the discovery of just what dyes were affecting him asbestos patches treated with the various dyes were used, the idea being to learn whether it was the dye alone which caused him to break out into a kind of eczema or whether something in the fabric containing the dye caused the irritation.

A second article told of the "injection" of medicine, particularly for Raynaud's disease and chronic arthritis, by electricity, where an asbestos bandage was soaked in the medicine, wrapped around the affected limb or joint and then a flexible metal plate, connected to the positive pole of a galvanic generator placed over it while a moist pad electrode is placed on the back, connected to the negative electrode and the current turned on and slowly increased. It is claimed that by this method the electric current breaks the medicine down into ions which are carried, according to the principle of ionization, into the skin.

Of course these uses are probably more experimental than anything else at present, but just another example of the use of asbestos in the many and various activities in the daily life of the human race.

Accounts of the use of asbestos in other ways in the realm of medicine are solicited. If you run across any in your day to day reading of newspapers, magazines, etc., let us know about them.

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Handy Methods for the Pipe Coverer



1. *A Tool for Smoothing and Straightening Pipe Covering Bands.* Altho pipe covering bands are comparatively inexpensive, workmen are often confronted with the necessity for using a considerable number over again after having been on the pipe covering for some time, provided they are in fair condition. A device which works well for this purpose can be made from an old automobile brass windshield adjustor link as shown. The link is bent a trifle to afford a good grip with the hand.

The bands when drawn thru the link as it is pressed against any convenient flat surface are easily and quickly restored to a smooth, even condition. After a pull or two thru the link they can be laid on the sections of pipe covering as smooth and straight as they came from the factory. Any good workman can make the link and it can be used conveniently anywhere about the shop or plant.

2. *Rubber Chisel End.* The common cold chisel is often very effectively used in cleaning off old asbestos. Because of its weight and shape many places can be reached with it where a lighter or a heavier tool would be of little value. But if the head of the chisel is kept ground to a taper for safety when used with the hammer, it is not such an easy or comfortable tool on the palm of the hand, and soon

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wears a hole in the glove when used to drive it gongelike into hardened spots of pipe covering.

Keep an inexpensive No. 18 crutch or chair leg tip handy in the tool box and slip it on the chisel as shown. It fits snugly, tho easily applied and removed, and you can chip and dig with the chisel for hours with no discomfort to the hand.

3. *Shoe Heel Plate with Steel Wire Brush.* The small steel brush is, of course a common and effective tool for cleaning off surfaces to which pipe covering or asbestos cement has been applied, or over which it is necessary to again apply such an insulation, but spots of grease are often encountered which are a bit too hard for the tough but flexible bristles. On one end of the brush drive a common cast iron heel plate as shown. One of the prongs on the plate may have to be removed but the others will fasten it firmly to the brush.

The part of the plate above the brush makes a handy, convenient and practical scraper, not too hard and easily and instantly used by turning over the brush. It is not in the way in any manner when using the brush in normal position, and its rounded shape makes it easy to reach many spots and places not conveniently touched by the bristles.

EDITOR'S NOTE: We would appreciate comments on the above three suggestions. Are they useful to your shop and workmen? If they are similar handy methods will be published from time to time.

"ASBESTOS" has on file Bulletin No. 1 recently issued by the Federal Housing Administration and plans to file all such Bulletins issued by that Administration as they arrive. They contain a lot of information on the modernization loan procedure. However, if our readers wish to start a file of these Bulletins in their own offices for ready reference, write to Federal Housing Administration, Washington, D. C., and ask to be placed on the mailing list to receive such Bulletins as issued.

Don't rest now — you have a long one coming to you — keep busy!

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MARKET CONDITIONS

General business is summed up in the first paragraph of the National City Bank letter for September, as quoted below:

"The developments in the business situation during the past month have done little to clear up the outlook for Fall, which is now the question of chief concern to business men. The chief causes of uncertainty are the indifferent prospects for the capital goods industries; apprehension as to the effects of the drought and the general difficulty of foreseeing how business will be affected by governmental policies. At present conservative views are evidently uppermost. Merchants are cautious and in the wholesale markets Fall buying has been sluggish, the general policy having been to place conservative orders at first, with the intention of reordering later if business justifies it."

Asbestos. Raw Material.

The Canadian mines are shipping more asbestos this year than last, indicating a revival of trade generally. This fall should show still more improvement as the building industry in the United States is showing considerable signs of improvement due to remodelling of homes, and this improvement should continue as the effects of the National Housing Act get underway.

Importations to the United States from sources other than Canada are also showing a decided gain, while at the same time there are no large stocks of raw asbestos held by consumers, indicating revived buying very shortly. There isn't any indication of any lowering in prices.

Asbestos Manufactured Goods.

Textiles. Volume remains practically unchanged. Prices are quite steady.

Brake Lining. The automotive industry is keeping in fairly good shape and with good weather during the fall months and consequent touring, inspection being more and more insisted upon by the states and the other factors all tending to keep brakes and brake bands in perfect con-

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dition, there is little question but that the brake lining market will continue to hold its own during the fall. Production of cars (annually) seems to be on the upswing again. Of course competition is keen; prices are fairly steady.

Insulation. High Pressure. Volume holds fairly steady with prices firm.

Insulation, Low Pressure. This market shows seasonal improvement which, of course is usual at this time of year. The condition of the construction industry, however, would indicate that most of the material being ordered at present is being used to replenish stocks and unless the situation improves materially within the next month or two a decided slackening off may be experienced. Prices are fairly firm.

The Paper and Millboard market shows some seasonal improvement altho not as decided as in the low pressure field.

Asbestos Cement Products. Sales of asbestos cement shingles continued at a satisfactory rate during August with possibly a slight seasonal decline which is not unusual at this time of the year. Good business is anticipated during the fall months and it is certain that asbestos shingle sales for 1934 will be substantially greater than for 1933 and possibly greater than in 1932.

There is also a marked increase in the demand for corrugated asbestos cement sheets, flat sheets and asbestos wallboard.

The above comments are made by those in close touch with the various markets. We welcome market comments at all times.

AUTOMOBILE PRODUCTION

Production, (factory sales) of automobiles for July, 1934, for both the United States and Canada, amounted to 277,689, compared with 235,897 for July 1933, and with 321,970 for June, 1934.

During the first seven months of 1934 production totalled 2,074,112 against 1,257,652 for the first seven months of 1933.

Research and Building

L. R. Hoff, President of Johns-Manville Sales Corporation, in a recent report to the American Institute of Architects and Producers Council, stresses research in the construction industry. We quote a few paragraphs:

"A very radical change has taken place in public sentiment toward building, and a new order—a new deal—is confronting the building industry, which we must accept whether we like it or not, because it seems to be inevitable.

"The architect must take the leadership in developing methods of construction, thru design, layout and use of materials which will reduce cost. He must, at the same time see that quality is not sacrificed, and maintain, so far as possible, the high standards of good taste, ingenious design and sound construction, which have always been the basis of good architecture.

"Research is going to be more important and necessary than ever if products and construction methods are to be reduced in cost. We cannot expect the architect to undertake this research, but it must be done with his co-operation and advice. The producer must tackle this job and do it in such a way that there need be no guess work as to what may be expected of the product, to what extent and how best it will serve the purpose to which it may be put, and how it will perform over any given period of time. Here, again the architect and the producer are inter-dependent, and must work in close unity to a common end."

As our readers will notice from pages 35 and 36 news is very scarce this month. Don't forget that we must *have* news in order to publish it and the only way we can get it is to receive it from our readers.

Lazy people have no right to complain — busy ones haven't the time.

ASBESTOS

CONTRACTORS AND DISTRIBUTORS PAGE

METHODS FOR DETERMINING ESTIMATED COST

That part of the Code of Fair Competition for the Construction Industry known as Chapter XIV—Insulation Contractors Division, gives under Rule 10 a temporary method for determining estimated cost, suggesting this rule until such time as the accounting system and methods of cost finding, etc., can be formulated by the Divisional Code Authority and approved by the Administration.

The rule is as follows: Estimated costs shall be the sum of such of the following items as are properly represented in any such sale, bid or order:

- a. All material to be used in the contract.
- b. Labor and supervision at the site.
- c. Compensation and liability insurance.
- d. Workmen's Travelling Expenses.
- e. Board for workmen.
- f. Freight and cartage.
- g. Cost of material and labor for scaffolding, less the salvage value of the material so used.
- h. Equipment repair and rentals applicable to the individual contract.
- i. Any other direct expense applicable or caused by the execution of the individual contract.
- j. Allowance of not less than 15% of the sum of Items a to i hereof for Overhead.

For the purpose of this temporary method for determining estimated costs nothing shall be included for depreciation on unused facilities, interest on indebtedness, interest on investment or selling expense, other than included in item j.

All insulation contractors should study this rule closely.

INSULATION CONTRACTORS' DIVISIONAL CODE AUTHORITY, INC.

Insulation Contractors' Divisional Code Authority, Inc., with headquarters at Chanin Building, 122 E. 42nd Street, New York, held its first meeting in Washington on July 25, 1934, and elected the following officers:

Chairman—H. W. Porter, Newark, N. J.

Vice-Chairman—W. L. Cremers, Philadelphia, Pa.

Treasurer—W. E. Ferguson, New York City.

Executive Secretary—W. E. Ferguson, New York City.

The appointment of Local Agencies, the designation of Bid Depositories, the approval of Survey Bureaus and all necessary steps to putting the Code in full operation are being completed as rapidly as possible.

ASBESTOS

All Insulation Contractors are urged to bear in mind that the Insulation Contractors' Divisional Code Authority, Inc., and the Asbestos Contractors National Association are two separate and distinct organizations. Membership in the Asbestos Contractors National Association is entirely voluntary. On the other hand, all insulation contractors are automatically members of the Insulation Contractors' Division of the Code of Fair Competition for the Construction Industry and are bound by all regulations thereof.

All insulation contractors must register all contracts as provided in their Chapter of the Code, regardless of whether they are members of the Asbestos Contractors National Association or any local association. It will greatly simplify the work of these two organizations if insulation contractors will keep clearly in mind the difference between the two.

COMMENT ON THE NATIONAL HOUSING ACT

In an address by William Green, President, The American Federation of Labor before the meeting of the Executive Council of the American Federation of Labor, held on August 16th in Atlantic City, the following comment is of interest:

"The immediate effect should be the employment of thousands upon thousands of building tradesmen, of tradesmen who supply building materials, and railroad and truck men who land it on the job.

"The ultimate result should be standards of housing for our people better than they have ever known, and in keeping with the wealth and the high ideals of our country.

"The volume of work is enormous. Once well under way, it should, now that money promises to be available, provide work for many years for the building trades and make life easier and better for the men and women of all trades."

BUILDING

Construction awards thru July continued above the corresponding monthly totals of last year according to F. W. Dodge Corporation. The July volume of \$119,698,800 for the 37 eastern states contrasts with \$82,554,400 for July, 1933, and \$127,116,200 for June of this year.

For the elapsed months of 1934 construction awards amounted to \$973,861,500 for the 37 eastern states as against \$514,667,800 for the corresponding seven months of 1933. The cumulative gain over 1933, amounting to about 90 per cent, was almost entirely due to the rise in publicly-financed construction projects growing out of the PWA program. This class of work alone totaled \$624,273,200 while for the corresponding 7 months of last year publicly-financed contracts amounted to only \$181,549,500.

Residential building contracts let during July fell below the respective totals for either the preceding month or July, 1933. For the year to date, however, residential awards are still above the total for the corresponding seven months of 1933; the gain amounts to about 11 per cent.

ASBESTOS

Asbestos in Aviation

By R. G. SKERRETT

Most of us are up in the air, figuratively speaking, when it comes to actual knowledge about how asbestos is utilized in the present day realm of aviation. Nevertheless, it is a fact that asbestos in one form or another has a number of important services to perform in that field of activity.

While the uses of asbestos in aviation may be broadly classed for the most part under the single heading of "insulation," still this term is susceptible of subdivision when we try to detail the various applications of asbestos. No matter how utilized, however, asbestos is employed in connection with mechanical flight because no other material is available that will answer so well.

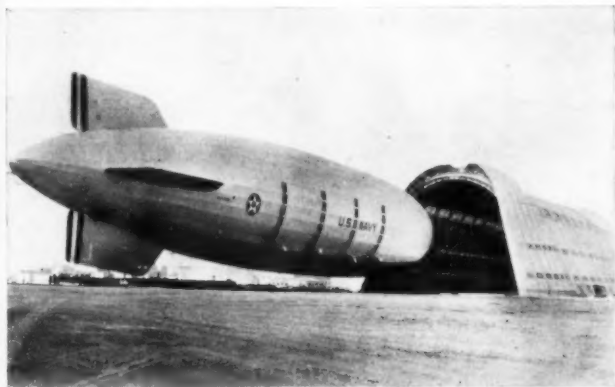
Asbestos is valuable in the service of aviation as a defense against the heat of the sun, the spread of fire, and the checking of electric leakage. A visit to any one of the large commercial or Government owned airports will reveal that asbestos is rather extensively utilized in the form of wall board as a fire screen around the engines of airplanes, and it is employed as a roofing material and for the siding of airport structures either alone or as an exterior coating for sheet metal. Also, at such places asbestos cement or asbestos magnesia covering insulates piping, tanks, and other parts of the station adjuncts where insulation is desirable.

Afloat, on any of the Navy's big airplane carriers, asbestos is made use of to minimize or to localize fire and, especially, to safeguard the storage of gasoline which is the common motive fuel of the airplanes of the fighting fleet. The need of this protection is readily understandable because of the highly inflammable nature of gasoline and because each airplane carrier is in a way a floating town that must rely upon self-contained resources to fight fire, no matter what the origin. Planes on leaving one of these carriers take off after an initial run on the vessel's long and flat deck, and the same aircraft when returning have to alight upon the deck which, if the sea be rough, may

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be rolling. The naval aviator, expert as he is in getting back on to his floating base, still always faces a possible spill and perhaps a smash-up in doing so. Accordingly, a certain number of the crew, clothed from head to foot in asbestos garments and armed with portable fire extinguishers, are always on duty at such times to immediately smother any flames that may result from a ruptured fuel tank, thus nipping quickly a fire that might otherwise acquire destructive proportions and imperil the ship, itself.

It is not permissible to publish particulars about the internal organization of one of our naval aircraft carriers, but in a general way these vessels are much like other fighting ships. They carry ammunition which must be shielded from high temperature as well as fire. Their



Official Photograph—U. S. Navy.

Great dirigible "Macon" leaving the airdock at Sunnyvale, California.

primary source of motive energy is high powered boilers, and inside and out those steam generators are insulated in one way or another. Steam pipes, hot-water pipes, refrigerating-brine pipes, cold-storage compartments, oil-burning cooking apparatus, etc., etc., are insulated either with

ASBESTOS

asbestos cement, asbestos-magnesia coverings, asbestos wall board, or asbestos fabric of some kind. Insulation is necessary not only to insure operating economy and efficiency, but also to contribute to the comfort and to the well-being of a personnel of 1,300, officers and crew.

In addition to the foregoing services that call for asbestos, the *U. S. S. Saratoga* and the *U. S. S. Lexington*, the outstanding units of our naval air force, are each provided with a well-equipped foundry, a machine shop, a blacksmith shop, and an electrical repair shop. In all of these important departments asbestos is utilized for one purpose or another, and in most of the forms found in similar repair and upkeep facilities ashore. Asbestos lends itself aboard these airplane carriers either directly or indirectly to the efficiency of the ships as units in our mobile defense.

Out at Sunnyvale, California—approximately 35 miles south of San Francisco,—the Navy has an airdock for its great dirigible *Macon*, and that structure is said to be the biggest thing of its kind in existence. The airdock illustrates again some of the uses to which asbestos has been put in connection with the Navy's aeronautical air forces. The airdock is a truly monster building. It has an over-all length of 1,138 feet; it has a ground-level width of 310 feet, and it mounts to a height of 198 feet. Each end of the airdock can be sealed with two "orange-peel" doors, which move over the ground on semi-circular tracks that have a radius of 162 feet. Each of these doors weighs 600 tons, and a motor of 250 horsepower is provided to shove a door open or to close it. The supporting framework of the main body of the airdock is fashioned of 8,500 tons of steel, cleverly fabricated to insure the prescribed structural strength while affording a cavernous free space for the admission and the exit of the dirigible *Macon*.

One has only to be reminded of the prevalence of sunshine and its intensity in that part of our Pacific Coast region to grasp how exposure alternately to sun and shade would cause the airdock to expand and to contract. Such being the case, the naval designers instead of anchoring the middle part of the hangar and allowing the ends to

ASBESTOS

expand or to contract as was done in the case of the big airdock at Akron, Ohio, had the Sunnyvale structure composed of three independent sections that are free to expand or to contract and yet to overlap so that this telescopic movement will offer no opening for rain to enter. The total exterior surface of the airdock and the four end doors, if laid flat, would have an area of 14 acres; and the main floor of the airdock has an expanse of nearly 8 acres. Of the external area, about $1\frac{1}{2}$ acres are utilized for windows and skylights. To minimize the effects of the sun's rays, the ridge sector of the roof of the airdock is covered with an asbestos-asphalt material consisting of a base of 60-pound asbestos felt combined with three plies of 20-pound asphalt-saturated asbestos finishing felts. The hangar siding is of asbestos-covered metal. Beneath the concrete floor of the Sunnyvale airdock, there is an extensive duct system in which are placed numerous power cables. Concrete-asbestos pipes serve as subsidiary conduits for the different electric lines. The hangar contains a number of repair shops in which is done all overhaul and maintenance work in connection with the dirigible *Macon*, herself, as well as her attendant airplanes. Asbestos in different forms is used in these shops.

Sunnyvale is a self-contained naval shore station. Besides the great hangar, there are an administrative building, a barracks and mess hall, a recreation building, a dispensary, and quarters for the married and the unmarried officers on duty there. There is a radio and aerological station, several storehouses, and shops, and also a helium storage and purification plant which is the largest thing of its kind yet created. This plant includes a gas holder having a capacity of 2,000,000 cubic feet, and large high-pressure gas tanks of at least 1,000,000 cubic feet total capacity. The primary power plant is a steam one, and associated with it there is an electric generating plant. The readers of this Magazine are generally aware how asbestos is utilized and needed in plants of this sort. The uses of asbestos in aviation are constantly widening.



ASBESTOS

Little Lessons in Selling

How To Avoid Slumps

By John T. Bartlett

During the height of a sales contest, the leading contestant remarked to another salesman, "I'm not half as much interested in my sales of the next two weeks, as I am in the month following the end of the contest. This is one year that I am not going to have a slump."

One way—and perhaps the best—to avoid slumps is to see the danger of them ahead, and prepare for it. Every sales manager knows that when his men have exerted themselves to the utmost to win a contest, they have usually "given everything." The contests ends, and mentally and physically they are "shot." As they resume routine selling, stimulants and incentives, high-powered, are gone. There comes reaction, and a miserable showing.

There is a deep psychological reason why the salesman who knows that there is danger of a slump has gone half the way to avoid one. The sub-conscious gets on the job. While the salesman is doing his utmost to win the contest, he is actually holding something in reserve. His sub-conscious mind sees to it that he does, just as the traveller, setting out across a desert on a two day journey, will not drink all his water the first day, but save sufficient for the next.

The sub-conscious mind is a wonderful thing. Not only does it regulate expenditure of nervous energy, so that some is still left when the contest is over; but it is hard at work making plans for the danger period.

Accordingly, the salesman plans that, during the after period, he will concentrate on certain lines, or groups of customers. And during the contest, he is consciously building up leads to the work after the contest is over.

Another kind of slump comes to the man who, as he sells hard and with determination from day to day, doesn't insist that he have a certain amount of relaxation. The right balance can be struck between work and play, so that a salesman really never needs a vacation—he keeps constantly fit.

ASBESTOS

PRODUCTION STATISTICS

Africa (Rhodesia)

(Statistics published by Rhodesia Chamber of Mines).

June 1934

	Tons (2000 lbs.)	Value		
Bulawayo District				
Nil Desperandum (Afr. Asb. Mng. Co. Ltd.)	239.70	£ 2,996	5	....
Pangani (J. S. Hancock) Nov. June	75.58	888	10	11
Shabanie (Rho. & Gen. Asb. Corp. Ltd.)	1,672.68	20,908	8	9
Victoria District				
King & Gath's (Rho. & Gen. Asb. Corp. Ltd.)	427.27	5,340	18	9
	2,415.23	£30,134	3	5
June 1933	2,703.25	£92,038	11	3

Canada.

(Statistics by Bureau of Mines, Province of Quebec).

	July 1933 Tons (2000 lbs.)	July 1934 Tons (2000 lbs.)
Fibre	14,531	12,042
By-Products	288	505

The National Automobile Chamber of Commerce has just published Automobile Facts and Figures for 1933, a hundred page book giving complete statistics on the Automobile Industry.

Out of the 33,330,000 motor vehicles in the world during 1933, 72% were in the United States.

Another interesting set of figures covers the registration of motor vehicles in the United States. In 1895 there were four registrations; in 1905 this had jumped to 78,000; by 1915 the number was 2,445,666; in 1925 it was 19,937,274, while in 1933 the total was 23,827,290. The highest total ever registered was in 1930—26,545,281.

Other figures given in the book are just as interesting.

A S B E S T O S



Imports into U. S. A.

(Figures published by U. S. Dept. of Commerce)

Unmanufactured Asbestos

	June 1933	June 1934
	Tons (2240 lbs.)	Tons (2240 lbs.)
Africa (Br. S.)	121	223
Canada	8,720	7,171
Cyprus, Malta and Gozo .....	.....	179
Italy	192	2
United Kingdom .....	.....	2
	9,033	7,577
Value	\$270,394	\$268,079

Tabulation of Crudes and Fibres:

Crude (Africa — Br. S.)	121	223
Crude (Canada)	40	127
Crude (Italy)	3	2
Crude (United Kingdom) .....	.....	2
Mill Fibre (Canada)	3,160	2,638
Lower Grades (Canada)	5,520	4,406
Lower Grades (Cyprus, Malta & Gozo) .....	.....	179
Lower Grades (Italy)	189	.....
	9,033	7,577

Manufactured Asbestos Goods:

	June 1933	June 1934
	Value	Value
Belgium .....	.....	\$1,112
Canada .....	.....	119
France	410	.....
Germany	263	1,354
United Kingdom	1,810	6,347
	\$2,483	\$8,932

Exports from U. S. A.

During June, 1934, 97 tons of Unmanufactured asbestos valued at \$6,648 were exported; in June, 1933, the total quantity was 49 tons valued at \$6,112.

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Exports of Manufactured Asbestos Goods:

	June 1933		June 1934	
	Pounds	Value	Pounds	Value
Paper, Mlbd. and Rlbd.	156,208	\$8,087	75,227	\$5,056
Pipe Covg. and Cement	100,667	5,222	190,696	8,572
Textiles, Yarn and Pkg.....	91,162	38,862	104,753	42,966
Brake and Clutch Lining				
Not Molded ¹	144,571	20,749	160,659	24,215
Molded & Semi.molded		32,026		56,958
Asbestos Roofing ²	1,129	2,097	4,792	7,406
Magnesia and Mfrs. of	34,963	2,534	581,240	105,109
Other Asbestos Mfrs.	136,220	6,809	41,834	6,629

¹Lln. Ft. 28sq.

Exports of Raw Asbestos from Canada.

(Figures by Dominion Bureau of Statistics)

	July 1933		July 1934	
	Tons (2000 lbs.)	Value	Tons (2000 lbs.)	Value
United Kingdom	290	\$ 19,892	316	\$ 17,375
United States	4,404	201,553	3,562	168,564
Australia	60	3,000	86	4,210
Belgium	170	5,350	185	11,238
France	164	10,118	195	9,064
Germany	359	31,315	465	33,004
Italy			71	7,685
Japan	790	27,513	409	17,925
Netherlands	22	660		
Poland			33	1,850
	6,259	\$299,401	5,322	\$270,915

Sand and Waste—

United Kingdom	80	1,600	380	8,235
United States	6,950	101,630	5,453	81,291
Belgium	30	375	60	810
France	30	600	30	510
Germany	70	1,400	163	2,598
Netherlands			55	660
Porto Rico	71	1,430		
	7,231	\$107,035	6,141	\$94,104
	13,490	\$406,436	11,463	\$365,019

A S B E S T O S

Imports and Exports from England

Imports of Raw Material.

	Tons (2000 lbs.) (2240 lbs.)	Value	Tons (2000 lbs.) (2240 lbs.)	Value
Africa (Rhodesia)	835	£16,121	858	£15,348
Africa (Union of South)	793	16,790	720	16,334
Canada	385	5,511	233	3,047
Cyprus	178	3,209	31	543
Finland	—	—	33	218
Germany	—	12	—	—
U. S. of America	9	533	3	86
Soviet Union (Russia)	184	3,430	188	3,627
	2,384	£45,606	2,066	£39,203

Exports of Asbestos Manufactures.

The figures given below covering exports of asbestos manufacturers for June were omitted from the August number because they were not received before that number went to press.

	June 1933		June 1934	
	Cwts.	Value	Cwts.	Value
To Irish Free State	4,498	£ 2,864	7,535	£ 5,123
To British India	4,315	6,413	6,119	9,363
To Australia	596	4,467	476	3,564
To Other British Countries..	11,374	14,723	9,872	18,243
To Netherlands	1,420	3,933	1,321	4,967
To Belgium	648	3,716	538	2,881
To France	564	3,148	484	3,085
To Italy	479	2,962	519	5,187
To Other Foreign Countries	6,820	21,311	9,924	30,810
	30,714	£63,537	36,788	£83,223
	July 1933		July 1934	
	Cwts.	Value	Cwts.	Value
To Irish Free State	5,868	£ 3,274	4,327	£ 2,631
To British India	2,712	6,086	5,420	7,948
To Australia	701	5,802	837	4,132
To Other British Countries..	11,669	19,575	15,117	19,706
To Netherlands	920	3,499	1,131	2,882
To Belgium	389	3,123	774	3,292
To France	221	2,687	544	2,497
To Italy	423	3,922	330	3,429
To Other Foreign Countries	5,558	21,968	7,290	28,248
	28,461	£69,936	35,770	£74,765

ASBESTOS

NEWS OF THE INDUSTRY

Birthdays. The following gentlemen are to be congratulated this month on the occasion of their birthdays: W. N. Bolster, Manager, Asbestos Covering & Textile Company, Boston, Mass., whose birthday falls on September 20th; G. Koerner, President, Insulating & Materials Co., St. Louis, Mo., September 24th; M. William Bray, Secretary, Mohawk Asbestos Shingle Co., Inc., Utica, N. Y., September 25th; C. Stanley Morgan, Detroit, Mich., September 25th; M. J. O'Malley, President, Standard Asbestos Mfg. Co., Chicago, Ill., September 26th; Fred Surridge, Manager, R. V. Aycock Co., St. Louis, Mo., September 26th; J. M. High of Ruberoid Co., New York City, September 28th; O. P. Hennig, President, Hennig Asbestos & Packing Co., Chicago, Ill., October 3rd; John H. Victor, President, Victor Gasket Mfg. Co., Chicago, Ill., October 9th; Russell E. Crawford, Secretary, Ehret Magnesia Mfg. Co., Valley Forge, Pa., October 9th; Thomas D. Stone, President, Stone Industrial Equipment Co., Springfield, Mass., October 14th; R. J. Evans, Vice Pres. & General Manager, Asbestos Mfg. Company, Huntington Ind., October 15th.

Raybestos Manhattan, Inc., earned net income of \$719,831.98 during the six months ended June 30, 1934, equivalent to \$1.12 per share, comparing with net income of \$229,396.59 or 36c. per share, during the same period in the previous year.

The Balance Sheet at June 30, 1934 revealed total Assets amounting to \$16,525,114.03 including \$8,001,628.09 of Current Assets, equivalent to eleven times the Current Liabilities of \$715,026.73 at the close of the quarter. The Company had no banking or funded debt, or other capital obligations. The book value of its 642,900 shares of stock outstanding after deducting the 33,112 shares held in the treasury, was \$23.32 per share. The net Current Assets represented \$11.33 per share, of which Cash and Marketable Securities amounted to \$4.26 per share.

The Directors declared a dividend of 25c per share payable September 14, 1934, to stockholders of record at the close of business August 31, 1934.

India Rubber Journal. Recent articles in the India Rubber Journal on asbestos subjects are: Blending Asbestos and Magnesia in the June 3rd issue; Asbestos Pastes in the June 9th issue; The Italian Asbestos Market in the June 30th issue; Insulation-Resistance Tests of Asbestos Products in the July 14th issue; and Asbestos Protection for Regenerative Lamps in the July 21st issue; Crucibles in the August 11th issue; Pipe Connections for Asbestos Dust in August 19th, and Covers for Flues in the August 25th issue.

ASBESTOS

Johns-Manville have recently issued a most attractive and useful Packing Catalog. It contains 48 pages and cover and within those 48 pages is packed a lot of information. About 33 pages contain descriptions and illustrations of the various packings made by Johns-Manville; a table giving packing recommendations for use under various conditions occupies five more, while various other information on packings and packing service, including weights, method of packaging, etc., fill the remaining space.

The catalog will no doubt be in demand as a reference book and we are glad to have a copy in our library of asbestos advertising literature.

PATENTS

Machinery Packing. No. 1,969,008. Granted on August 7, to Cecil R. Hubbard, Palmyra, N. Y., assignor to Garlock Packing Co., Palmyra, N. Y. Application December 29, 1932, Serial No. 649,255. Description upon request.

Brake Lining Composition. No. 1,969,041. Granted on August 7, to Ralph L. Seabury and Louis W. Murray, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich. Application May 29, 1930. Serial No. 457,542.

Described as a brake lining material containing asbestos, a phenolic condensation product and at least 33-1/3% of lead.

Heat Insulating Material. No. 1,969,156. Granted on August 7th to Carl H. Schuttler, Aurora, Ill. Application January 8, 1930. Serial No. 419,246.

Described as a process for making heat insulating material which consists in suspending in a water bath mineral wool fibres, dissolving magnesium sulphate in the bath, allowing the solution to drain slowly, whereby the fibres assume a stratified formation and subjecting the remaining mixture to super-heated steam whereby all free water is driven off and a cementing of the fibres results.

Heat Insulation. No. 1,969,621. Granted on August 7th to Carl Georg Munters, Stockholm, Sweden. Application April 2, 1934. Serial No. 718,663; in Sweden March 3, 1931.

Described as a heat insulating structure comprising exterior confining walls, as gas hermetically enclosed therein and having a lower heat conductivity than air at a corresponding pressure and temperature and partitions formed of sheet material between said walls arranged transversely to the direction of heat transfer for counteracting heat transmission, by radiation and convection, said partitions forming intervening gaseous layers materially narrower than the critical spacing for preventing convection curves in intervening vertical layers of air.

Colored Asbestos Shingle. No. 1,970,197. Granted on August 14th to Edgar S. Ross, Philadelphia, assignor to Philip Carey Mfg. Co., application November 26, 1929, Serial No. 409,948.

Described as the process of manufacture of an asbestos cement product, consisting in forming said material into a sheet-

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- (3) Asbestos Cement Pipes
- (4) Textiles
- (5) Electrode Wrappings for Arc Welding

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like form and while it is moist applying to the surface and injecting into a portion only of the body adjacent to said surface, means to destroy the capillarity of the surface and said body portion.

Pre-formed Structural Unit. No. 1,970,328. Granted on August 14th to John C. MacIldowie, Nashua, N. H., assignor to Johns-Manville Corporation, New York. Application April 24, 1933. Serial No. 667,680.

Described as a preformed structural unit comprising a facing sheet of glass, a backing sheet of stone like material and a layer of yieldable material disposed between the said sheets and adhered to them, to form a unitary article.

Gasket. No. 1,969,795. Granted on August 14th to Ellis E. Hewitt, Edgewood, Pa., assignor to Westinghouse Air Brake Co., Wilmerding, Pa. Application July 26, 1933. Serial No. 682,239. Description upon request.

Sewer Pipe Joint. No. 1,971,100. Granted on August 21st to Albert C. Fischer, Chicago, assignor to Philip Carey Manufacturing Co. Application July 16, 1925. Serial No. 44,138. Description upon request.

TRADE MARKS

This information is supplied by the National Trade Mark Co., Munsey Bldg., Washington, D. C., who will conduct free of charge an advance search on any trade mark our readers may contemplate adopting.

Don-Flex. Serial No. 352,295. Small & Parkes Limited, Manchester, England. For linings and facings for brakes, clutches, or pulleys made wholly or principally of asbestos. Passed on August 21st.

Halo. Serial No. 349,034. Scandinavia Belting Co., Newark, N. J. For asbestos brake lining. Passed on August 28th.

ASBESTOS STOCK QUOTATIONS

		August 1934				
		Par	Div.	Low	High	Last
Asbestos Corp. (Com.)	New V. T.	np	-	5½	7	6
Carey (Com.)		100	-	35	35	35
Carey (Pfd.)		100	6	57½	57½	57½
Certainteed (Com.)		np	-	4½	6¾	5½
Certainteed (Pfd.)		100	7	15½	32	32
Garlock Packing (Com.)		np	-	15½	18	17
Johns-Manville (Com.)		np	-	39	49¾	46¾
Johns-Manville (Pfd.)		100	7	110	118	118
Raybestos-Manhattan (Com.)		np	60c	16	19	17¾
Ruberoid (Com.)		np	1	27¼	28½	28½
Thermoid (Com.)		np	-	3½	4	3¾
Thermoid (Pfd.)	7% Convertible	100	1	11¼	30	30

ASBESTOS

THIS AND THAT

In a recent Home Furnishings Edition of "Retailing" giving various suggestions for improving appearances in department stores, appears the following: "Ash trays are liberally sprinkled thruout the floor of another department. They are made of asbestos, hence hardly worth being removed by the filching type of customer. Cigarette burns in the carpet are a rarity in this department."

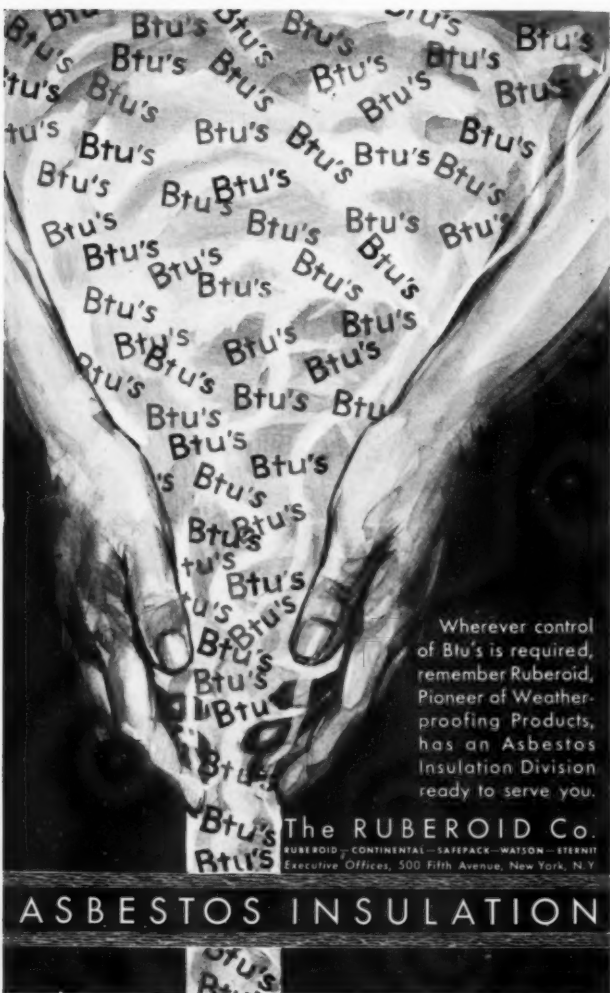
If it were not for the last sentence we in the asbestos industry might find it hard to forgive the statement in the next to the last one. However we suppose the little asbestos paper ash trays are *not* sufficiently attractive to tempt the souvenir hunter.

To investigate complaints of code violations, the Compliance Division of the NRA has established 54 offices under the State Compliance Directors. One is in each state and extra branch offices have been set up in New York, Pennsylvania, Texas and California. When complaints are not settled by the representatives of these offices or when appeals are taken from the decisions of the State Directors, the cases are referred to state adjustment boards, consisting of representatives of Labor, Capital, and the consuming public. The court of last resort is the Compliance Council at Washington, which recommends action when it fails to make adjustment.

Everyone knows the story of the asbestos dog chasing the celluloid cat, but here is a new one which might be substituted in after dinner speeches, etc.: "I wouldn't trust them with a box of wet matches in a damp asbestos quarry." Not so bad at that!

A trouble's a ton or a trouble's an ounce,
Or a trouble is what you make it;
And it isn't the fact that you're hurt that counts,
But only — how did you take it.

ASBESTOS



Wherever control of Btu's is required, remember Ruberoid, Pioneer of Weather-proofing Products, has an Asbestos Insulation Division ready to serve you.

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COMBINATION

High Temperature Insulation

ENDURO Combination High Temperature Insulation brings to industry the most efficient type of pipe and boiler insulation on the market today. The inner layer of high, heat-resisting ENDURO and outer layer of efficient 85% Magnesia combines to make an insulation of low thermal conductivity, unusual strength and durability, yet surprisingly light in weight (approximately 25 lbs. per cu. ft.). ENDURO has an extremely low percentage of shrinkage due to the use of pre-calcined diatomaceous earth. It compresses under crushing test, but will not collapse.

For years, Ehret has specialized in the manufacture of efficient insulations covering the field from sub-zero temperatures to 2000°F. ENDURO COMBINATION HIGH TEMPERATURE INSULATION is the result of years of careful study of equipment requiring high heat-resisting insulations. It can be recommended without question for super-heated steam and all high heat service up to 2000°.

There are several lucrative Ehret distributor territories available at present. Write for details.

THE
NAME

EHRET *Implies Quality*
MAGNESIA MANUFACTURING CO.

Executive Offices and Factories at VALLEY FORGE, PA.
INSULATIONS **PACKINGS**
REFRACTORIES **ASBESTOS TEXTILES**

FELLOWSHIP

BY JAMES WHITCOMB RILEY

When a man ain't got a cent, and he's feeling kind
of blue,
An' the clouds hang dark and heavy an' won't let the
sun shine through,
It's a great thing, O my brethren, for a fellow just
to lay
His hand upon your shoulder in a friendly sort of
way!
It makes a man feel queerish; it makes the teardrops
start,
And you sort o' feel a flutter in the region of your
heart;
You can't look up and meet his eyes; you don't know
what to say,
When his hand is on your shoulder in a friendly sort
of way.
O, the world is a curious compound, with its honey
and its gall,
With its care and bitter crosses, but a good world
after all,
An' a good God must of made it — least-wise, that is
what I say,
When a hand is on your shoulder in a friendly sort
of way.

